

(3) Remarks

Reconsideration of claims 1-16 and allowance of these claims in amended form and allowance of new claims 17-19, are respectfully requested in light of the above amendments and the following remarks.

35 U.S.C. §112 and Formal Issues

The dependencies of the dependent claims have been adjusted to overcome the objections as to improper multiple dependencies.

Also, in claim 8 "the control electronics" is replaced by "a control electronics" since it is first introduced in this passage.

Other amendments are also presented, as are new claims 17-19.

Reference numerals have been deleted from all claims.

In claim 1, the fastening web is now described as fixed inside of the ventilation pipe. This makes clear that the yoke/cross-brace (44, 64) of McCabe does not correspond to the fastening web of the invention.

The limitation of part (a) of claim 1 "wherein each of the one or more air flaps is connected to a drive axle" is supported at page 6 lines 16-17. See for example "The drive axle 28 and an air flap 32 are rigidly connected to one another."

The limitation of part (f) of claim 1 comes from original claim 2.

The limitation of part (g) of claim 1 "wherein said angle β is dependent on the diameter of the ventilating pipe" is supported at page 6 lines 29-30.

The limitation added to claim 9 is supported at page 4 lines 1-2.

The limitations of new claim 17 and part (b) of new claim 18 are supported at page 6 lines 10-32.

The new claim 18 is a restriction of the original claim 1 by the feature that the flaps are mounted firmly to and are rotatable by the driving axle. Therefore, the lead screw 38 of McCabe is not equivalent to the "drive axles" of the invention and this claim, as an alternative to claim 1, is also novel over the art cited.

With new claim 19 the fastening web is claimed independent of the ventilating pipe. The limitations of part (c) of new claim 19 are supported by page 8, line 11 and page 6, lines 29-30.

Claim Rejections – 35 U.S.C. §102

Claims 1-16 were rejected as being anticipated by US 2001/0055947 (McCabe). This rejection is respectfully traversed. Applicant specifically traverses the use by the examiner of version of McCabe Fig. 4, by assigning labels and functions not shown in the reference itself.

From applicant's description of the invention and the comments below, it will be apparent that there is a strong contrast between McCabe (the only document applied to the claims) and also to U. S. Patent No. 5,741,180 (Xia, *et al.*, cited but not applied).

The points of novelty of applicant's claims center around the fact that the claimed fastening web for the claimed air flaps enables use in differently dimensioned ventilation pipes.

In claim 1 the fastening web is now described as fixed inside of the ventilation pipe.

Claim 1 now also specifies that "each of the one or more air flaps is connected to a drive axle", as supported at page 6 lines 16-17. The statement there that "[t]he drive axle 28 and an air flap 32 are rigidly connected to one another" shows a direct connection not mentioned in McCabe.

It must be noted that what the examiner's figure attributes to be an "air flap" is not the air flap itself, but a stiffener for the flap. This can be seen in the inventor's copending file that is referenced [0067] in the patent, namely U. S. Patent No. 6,224,481. See, stiffener 12 in Figure 11 of that document:

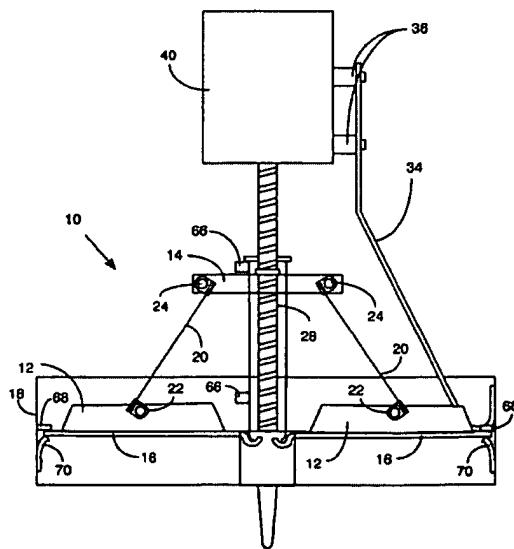


Figure 11

Note also therein that members 20 cannot be considered part of a fastening web because they are pivotally connected to both the stiffener 16 and the actuator bracket 14. These parts are not numbered or described in the cited McCabe reference, and this description for U. S. Patent No. 6,224,481 helps to clarify the differences between the McCabe structure and that presently claimed.

This plurality of pivotal connections is in contrast with the present invention wherein the fastening web holds pivot bearing 30 for the drive axle that directly moves the one or more air flaps.

Also, claim 1 calls for means for transmitting force and/or torque to the drive axle connected to the one or more air flaps wherein the fastening web and means for transmitting force are arranged in the ventilating pipe, on a longitudinally extending plane of symmetry. There is no such relationship in McCabe.

Further, by specifying in claim 1 that there is a dependence between the diameter of the tube and the angle of the fastening web it is clear that there is a substantial difference to the "angular situation" which is described in McCabe (Fig. 4) between the cross-brace and the flaps.

The new claim 18 is a restriction of the original claim 1 by the feature that the flaps are mounted firmly to and are rotatable by the driving axle. Therefore, the lead screw 38 of McCabe is not equivalent to the "drive axles" of the invention and this claim, as an alternative to claim 1, is also novel over the art cited. The lead screw 38 of McCabe does not directly move the flaps.

Accordingly, and as will become more apparent from the following, the subject matter of the claims is novel.

McCabe relates to air/smoke/fire dampers for modulating air flow and pressure levels and, in one embodiment (Fig. 6-8), the device comprises a frame, having a shape of a circular cylinder, and two damper blades 116. The two damper blades 116 are shaped semicircular and can be adjusted by a motor 70 located perpendicular to a circumference of the frame (Fig. 7) [0068]. A beam is mounted fix on the cylindrical frame. A lead screw 38 orientated in longitudinal direction of the ventilating pipe is mounted rotatable on the beam and is driven by a motor 70. The motor 70 is supported by a holding device (see below), which is mounted on the beam. Parallel to the beam, a cross-brace 64 whit a nut 66 is axially moveable with respect to the ventilating pipe by rotation of the lead screw 38. Two connection arms each mounted at one end to a damper blade 116 and to the cross-brace 64 by the other end to afford actuating the damper blades 116. The damper blades 116 are mounted at the central beam and open and close by a butterfly-like movement (fig. 6, 7) [0067].

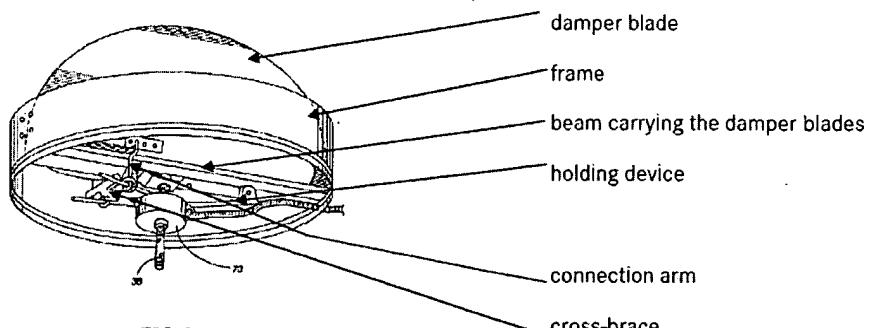
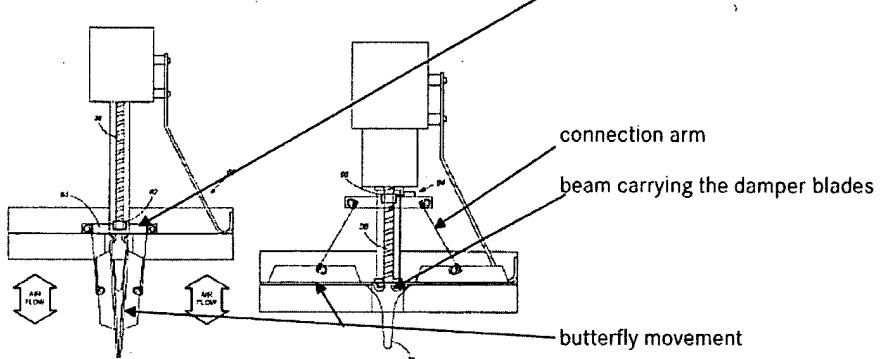


FIG. 8



In another embodiment (for rectangular profiles) a multiplied damper 20 having horizontally rotatable blades 22 with an operator means 24 and lead screw actuator means 26, where a motor can be located within (fig. 2) or outside the rectangular frame (fig. 1). The operator means 24 comprises a horizontally mounted operator shaft 30 and a linkage means 32, connected to the shaft and the blades 22 to open and close those [0061]. The motor 28 is rotatable mounted to the frame 36 to engage different orientations dependent on an orientation of the blades 22 [0062]. A yoke 44 has a nut which is located on the lead screw 38 of the motor 28. By actuating the lead screw 38 by the motor 28, it is moved axially and therewith the yoke 44 generates a rotation of the operator shaft 30 [0063].

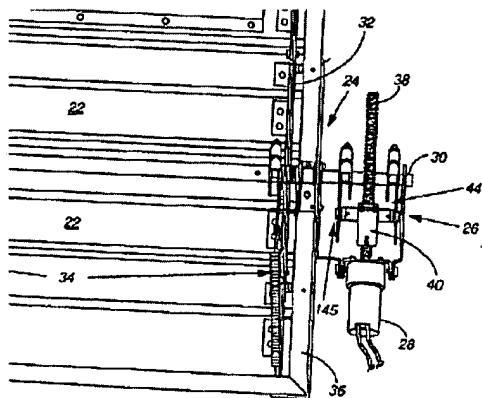
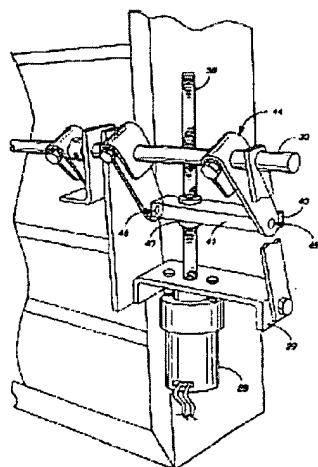


FIG. 1



In contrast to the present invention, the air flaps of McCabe are not held by a fastening web which is mountable at different angles depending on a diameter of the pipe and which is therefore applicable to differently dimensioned ventilating pipes. The air flaps are also not fixedly mounted on the drive axle.

Furthermore, the subject matter is non-obvious as well: McCabe, as described for a circular pipe, does not lead to the presently claimed invention, since the bearing of the air flaps is fixedly mounted in the centre of the pipe. Therefore, it is not possible to use the same bearing in pipes having different diameters. McCabe does not consider mounting the bearing into the pipe in an angle different from perpendicular to a longitudinal axle of the pipe.

McCabe, as described for a rectangular pipe, does also not lead to the presently claimed invention, since the air flaps are held in the frame of the pipe itself. McCabe does not mention to mount the frame in a different angle than perpendicular to the axle of the pipe. However, the utility of mounting a frame of a pipe in such a way would be dubious, since other problems would occur by building the pipe system.

The yoke 44 of McCabe does not lead to the invention. The angular deviation of the yoke is not in a relation with the diameter of the pipe, but only to a desired flow rate. Further, the yoke does not support the air flaps and therefore cannot be seen as a fastening web.

While not specifically applied, applicant notes that Xia, *et al.*, relates to a flow modulating device 50 used to control and monitor airflow (col. 1, line 8). A flange 55 is used to attach the device 50 to an outside wall (col. 3, line 66). Two shafts 58 are located lateral with respect to the centre line of the tube and eccentric (fig. 2). Two semicircular shaped flaps 70 are mounted each on a shaft 58, which is rotatable supported by the housing 52 (col. 4, line 10). A drive mechanism 62 is mounted on the outside of the housing 52 and drives one of the shafts 58 where a linkage mechanism 60 causes the other shaft 58 to move in mirror image synchronization (col. 4, line 6-9; fig. 4).

In contrast to the invention, a fastening web with a pivot bearing for the air flap(s) in the ventilating pipe is not disclosed. Therefore, Xia, *et al.*, disclose also no possibility to mount the same bearing at different angles depending on a diameter of the pipe and which is therefore applicable to differently dimensioned ventilating pipes.

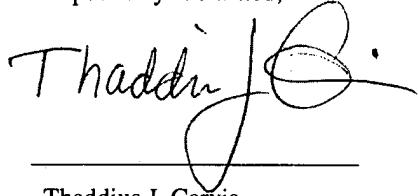
Finally, McCabe in view of Xia, *et al.*, does also not suggest the invention. The constructions of the valves are too different to be combinable. Xia, *et al.*, discloses a drive axle perpendicular to the longitudinal axis of the pipe whereas McCabe discloses a drive axle parallel to the longitudinal axis of the pipe.

In summary, not even a combination of the cited documents leads to the invention since none of them discloses to mount the same bearing at different angles depending on a diameter of the pipe, which is therefore applicable for differently dimensioned ventilating pipes.

Applicant has made a significant improvement in the art of controlling air flow in ventilating pipes by providing a structure with a fastening web for air flaps that enables use in differently dimensioned ventilation pipes, and allowance of all claims is believed in order.

Applicant has endeavored to place the application in condition for allowance, and early and favorable action is believed in order and is earnestly solicited. If for any reason the examiner sees need for formal changes, he is invited to call the undersigned.

Respectfully submitted,



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